

# REMARKS

This is a simultaneous amendment with a request for continued examination under 37 C.F.R. 1.114, which is filed in response to the final Office Action dated June 6, 2006 in the above-identified U.S. Patent Application.

## I. Claim Changes

Independent claims 26, 32 and 42 have been amended to further clarify and limit the road or street section description obtained by processing image data from e.g. a camera.

To overcome the obviousness rejection based on a combination of Heimann, et al, with Endo, et al, the road or street section description obtained from the image data in method claims 26 and 32 and in device claim 42 has been **limited to** 'cycle lane information **and/or** road construction information'. The term "lane quality information" has been deleted from claim 26 and the other independent claims, because this term would read on weather-related lane or road quality information, such as the presence of snow or ice (Endo, et al, paragraphs [0060], [0190], & [0176]).

In addition, the term "building information" has been changed to "road construction information" (see page 4, lines 9 to 10; and page 13, lines 14 to 18 of applicants' specification). This change has been made to limit the term

“building information” to information regarding location, size, and other characteristics of road and/or street sections only. In other words, the change to “road construction information” avoids a broad interpretation of the term “building information” as including the location and position of structures, such as parking structures, which are built or constructed along the road and/or street sections. This latter term encompasses only information regarding the road and/or street sections themselves.

Basis for the change of “building information” to “road construction information” and new claims 48 to 50 appears in the disclosure at various locations, such as page 3, lines 1 to 3; page 4, lines 9 to 10; and page 13, lines 14 to 17, of the applicants’ originally filed specification. Regarding the permanent or temporary changes in the courses of roads see page 3, line 3, of applicants’ specification.

Furthermore a preferred embodiment of applicants’ method comprises updating an existing digital map with data collected by the claimed method regarding new roads that have been constructed since the digital map was produced or closing of roads due to road construction, i.e. changes in the course of roads due to road construction. See, for example, dependent claim 30 and various locations in the applicants’ specification, such as page 3, lines 7 to 11 (the objects of the invention); page 6, lines 21 to 23; page 9, line 7; and page 14, line 1.

## **II. Obviousness Rejection Based on US '042 and US '825**

Claims 26 to 28, 30 to 31 and 45 to 47 were rejected as obvious under 35 U.S.C. 103 (a) over Heimann, et al (US Patent 5,948,042), in view of Endo, et al (US Published Patent Application, 2002/0094825).

Heimann, et al, do disclose a method of continually updating a digital road map employed for traffic direction and guiding vehicles (column 2, lines 15 to 23). The method includes generating road data including providing vehicles with position determining devices (column 5, lines 25 to 30), which travel over the roads collecting vehicle position data. Route data including attributes for a particular road section associated with vehicle position data is also collected (column 5, lines 53 to 63).

The particular attributes disclosed in Heimann, et al, are the permitted directions of travel over a given road section (one-way streets, etc) and allowed turns at junctions and intersections (see column 2, line 19; line 39; line 49; lines 44 to 47; column 3, lines 20 to 24; column 4, lines 10 to 15; see method claims 1 to 4). These road characteristics or attributes strongly influence the choice of a route through an urban area, where the permitted road directions change over the years, particularly for special vehicles.

Thus Heimann, et al, collect data from road signs placed along a route or road in the method of Heimann, et al, e.g. with an imaging device or camera, because it is the road signs that include information regarding the legally

permitted direction of traffic flow, permitted turns, clearance, maximum permitted weight and other legal restrictions (column 2, lines 55 to 60; column 3, lines 51 to 57; column 6, lines 55 to 65). When the data on these road signs changes, the established route must often be changed because it becomes legally blocked, especially for certain special vehicles.

The feature that the collected information from the camera includes at least one of road construction information and cycle lane information in applicants' step d) of amended method claims 26 and 32 and in device claim 42 is **not** disclosed **or** suggested by Heimann, et al. The attributes disclosed in Heimann, et al, do not include road construction information or cycle lane information, only direction of travel information on the roads or street sections of an existing digital map and/or turning information for existing intersections of an existing digital map. US '042 is not concerned with changes in the number or location or size of the roads themselves, i.e. US '042 is **not** concerned with updating an existing digital map with changes in the positions or locations of road and/or street sections, such as the addition of new road and/or street sections since the existing digital map was produced. The attributes are assigned to road and/or street sections of an existing digital map (see column 2, lines 32 to 36).

In contrast, applicants' method includes driving over road and/or street sections to obtain information regarding the presence of new streets due to road construction, or the closing of existing streets shown on the existing digital map due to road construction. Furthermore US '042 does not disclose or suggest detecting the presence of cycle lanes on the existing road and/or street sections

of the digital map. These latter features are clearly now included in the amended claims 26, 32, and 42.

The newly cited Endo, et al, published U.S. Patent Application does disclose an information broadcasting system for collecting information by means of sensor devices mounted on a moving body and broadcasting the collected information. See paragraph [0002], [0023] to [0025] of Endo, et al. Particularly Endo, et al, do disclose a vehicle 10 that moves over a road and street system, which has sensor devices including a camera (paragraph [0174]) for collecting information regarding vehicle traffic or travel environment conditions. As noted in the final Office Action that particular type of information collected by Endo, et al, does include road condition information, particularly weather condition information regarding ice and snow (paragraph [0060] & other paragraphs noted above in section I). In addition, the presence and speed of obstacles in the vehicle path on the roadways or streets is detected [0060], especially information regarding traffic jams and road blockages [0191].

However Endo, et al, does **not** disclose or suggest that the information obtained during travel over the road and/or street sections includes cycle lane information and/or road construction information, especially regarding the location and position of new roads and the closing of or changes to existing roads.

It is well established by many U. S. Court decisions that to reject a claimed invention under 35 U.S.C. 103 there must be some hint or suggestion in the prior art of the modifications of the disclosure in a prior art reference or references

used to reject the claimed invention, which are necessary to arrive at the claimed invention. For example, the Court of Appeals for the Federal Circuit has said:

"Rather, to establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant...Even when obviousness is based on as single reference there must be a showing of a suggestion of motivation to modify the teachings of that reference.." *In re Kotzab*, 55 U.S.P.Q. 2<sup>nd</sup> 1313 (Fed. Cir. 2000).

Neither Heimann, et al, nor Endo, et al, disclose or suggest collecting road and/or street section information comprising cycle lane information and/or road construction information. Neither reference discloses or suggests updating an existing digital map for changes in the location or position of roads including new roads or the closing or changes to existing of roads due to road construction.

For the foregoing reasons and because of the changes in amended claims 26, 32, and 42, withdrawal of the rejection of claims 26 to 28, 30 to 31 and 45 to 47 as obvious under 35 U.S.C. 103 (a) over Heimann, et al (U.S. Patent 5,948,042), in view of Endo, et al (US Published Patent Application, 2002/0094825), is respectfully requested.

### **III. New Dependent Method Claims 48, 49, and 50**

With respect to new dependent method claims 48 to 50, it is respectfully submitted that particularly the features of these claims are not *prima facie*

obvious under 35 U.S.C. 103 (a) over Heimann, et al (US Patent 5,948,042), in view of Endo, et al (US Published Patent Application, 2002/0094825). Neither of these references are concerned with updating an existing digital map for changes in road and/or street sections due to road construction, such as construction of new roads or changes in the course of or closing of old roads.

#### **IV. Obviousness Rejection of Independent Device Claim 42 and Dependent Method Claims 29, 33 to 41 and Device Claims 43 and 44**

Claims 29 and 32 to 44 were rejected as obvious under 35 U.S.C. 103 (a) over Heimann, et al (U.S. Patent 5,948,042), in view of Endo, et al (US Published Patent Application, 2002/0094825), and further in view of Kawai, et al, (U.S. Patent 6,577,334).

Kawai, et al, disclose a vehicle control system including a computer data processing unit with a memory coupled to various vehicle internal sensors including an acceleration sensor, brake sensor, and speed sensor and external sensors including a GPS position sensor, distance sensor, gyro-magnetic sensor, and camera (abstract, fig. 1 and associated description in column 5 and following). The vehicle control system of this reference does include a method for obtaining data of the surroundings and means for analyzing the data to obtain a road or street section description.

Specifically, the camera in Kawai, et al, takes a picture of the road in front of the vehicle and the image data is analyzed to determine the distance of the

vehicle from the lines that demark the lane the vehicle is traveling or other lines on the road (column 1, line 62, to column 2, line 26 and column 9, lines 15 to 40). Also a laser distance measuring device or radar is employed to determine the distance and speed of obstacles, such as other vehicles (column 9, lines 40 to 51). According to a simplified description here in these REMARKS, the vehicle control means (computer) receives the information from the camera and obstacle/distance measuring devices and sends out control signals to the various parts of the vehicle to control its position in the lane during travel on the road.

However Kawai, et al, like Heinmann, et al, and Endo, et al, is unconcerned with updating a digital map with information regarding the location or position of new roads for an existing digital map or changes in old roads of the existing digital map.

Kawai, et al, does not disclose or suggest a device or method for collecting data regarding road construction and/or cycle information. For that reason Kawai, et al, does not disclose or suggest the modifications of the prior art as disclosed by Heinmann, et al, and Endo, et al, that will lead to the invention, as it is now claimed in *amended* device claims 42 to 44 or dependent method claims 29 and 32 to 41.

For the foregoing reasons and because of the changes in amended claims 26, 32, and 42, withdrawal of the rejection of claims 29 and 32 to 44 as obvious under 35 U.S.C. 103 (a) over Heimann, et al (U.S. Patent 5,948,042), in view of Endo, et al (US Published Patent Application, 2002/0094825), and further in view of Kawai, et al, (U.S. Patent 6,577,334), is respectfully requested.



## V. New Claims 48 to 50

With respect to new dependent method claims 48 to 50, it is respectfully submitted that particularly the features of these claims are not *prima facie* obvious under 35 U.S.C. 103 (a) over Heimann, et al (US Patent 5,948,042), in view of Endo, et al (US Published Patent Application, 2002/0094825), and further in view of Kawai, et al, (U.S. Patent 6,577,334). **None** of these references are concerned with or suggest a method of updating an existing digital map for changes in road and/or street sections due to road construction, such as construction of new roads or the closing or changing the course of old roads.

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549 4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,

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